

REMARKS

In the Office Action, the Examiner rejected claims 1-34 and 51-75. By this Response, Applicant amends claims 1, 27, 29, 31, 33, 51, 70, and 74; cancels claims 69, 71, and 75; and adds new claims 76, 77, and 78. These amendments and new claims do not add any new matter. Applicant respectfully requests reconsideration and allowance of all claims in view of the foregoing amendments and the following remarks.

Claim Rejections under 35 U.S.C. § 102

In the Office Action, the Examiner rejected claims 1-9, 12-21, 24-34, 51-56, 59-64, 66, 68, 70, 72, and 74 under U.S.C. § 102(e) as being anticipated by Knox et al. (U.S. Publication No. 2004/0252421). The Examiner further rejected claims 1, 16, 27, 31, 34, 51, and 64-75 under 35 U.S.C. § 102(b) as anticipated by Houf et al. (U.S. Patent No. 4,769,557). Applicant respectfully traverses these rejections.

Although Applicant does not intend or suggest that the specification should be read into the claims, Applicant submits that the specification provides context that may be useful in examining the present claims. Embodiments of the present application relate to on-machine control of a machine. Application, page 1, lines 26-27. The on-machine control involves a machine-mountable base unit having a machine protection device and a modular, replaceable control unit. Application, page 1, lines 27-28. The machine protection device may include a short-circuit protection device. Application, page 5, lines 20-22. Furthermore, the control unit may be selected from a variety of different modular control units having different control features. Application, page 6, lines 15-17. As the control unit is configured to control the machine, it may include an output connector for interfacing with the machine. Application, page 9, lines 18-20. Accordingly, independent claims 1, 16, 27, 31, 34, and 51, and their dependent claims, recite combinations of these various features, among others. Deficiencies of the present rejections are discussed below.

Legal Precedent

Anticipation under Section 102 can be found only if a single reference shows exactly what is claimed. *Titanium Metals Corp. v. Banner*, 778 F.2d 775, 227 U.S.P.Q. 773 (Fed. Cir. 1985). For a prior art reference to anticipate under section 102, every element of the claimed invention must be identically shown in a single reference. *In re Bond*, 910 F.2d 831, 15 U.S.P.Q.2d 1566 (Fed. Cir. 1990). To maintain a proper rejection under Section 102, a single reference must teach each and every limitation of the rejected claim. *Atlas Powder v. E.I. du Pont*, 750 F.2d 1569 (Fed. Cir. 1984). Accordingly, Applicant needs only point to a single element not found in the cited reference to demonstrate that the cited reference fails to anticipate the claimed subject matter. The prior art reference also must show the identical invention “in as complete detail as contained in the ... claim” to support a *prima facie* case of anticipation. *Richardson v. Suzuki Motor Co.*, 868 F.2d 1226, 1236, 9 U.S.P.Q. 2d 1913, 1920 (Fed. Cir. 1989).

Claim Rejections Relying on the Knox Reference

On a preliminary note, Applicant respectfully submits that the Examiner’s maintenance of the claim rejections in view of Knox is improper. Applicant appealed the Examiner’s rejections under Knox to a pre-appeal panel. See Pre-Appeal Brief Request for Review submitted on May 18, 2007. The panel subsequently issued a decision in which it stated, “The rejection is withdrawn and a new Office action will be mailed.” Notice of Panel Decision from Pre-Appeal Brief Review mailed on July 23, 2007 (emphasis added). Applicant does not understand how the Examiner has maintained a withdrawn rejection. Accordingly, Applicant respectfully requests the Examiner remove the rejection under 35 U.S.C. § 102 based on the Knox reference as this rejection has been previously withdrawn by the pre-appeal panel.

Furthermore, elements of the claims omitted from the Knox reference are discussed below. Similar claim elements found in multiple claims will be addressed together.

The Knox reference does not disclose a motor control unit configured to control a machine and/or motor.

Independent claim 1 recites, *inter alia*, “a modular control unit replaceably mountable to the machine mountable base, wherein the modular control unit comprises control circuitry configured to control the machine.” Independent claim 16 recites, *inter alia*, “a replaceable control unit removably coupled to the motor mountable base, wherein the replaceable control unit comprises control circuitry configured to control a motor.” Independent claim 27 recites, *inter alia*, “the modular control units comprise different types of control circuitry configured to enable different controls of at least one machine in the machine system.” Independent claim 31 recites, *inter alia*, “a control unit comprising control circuitry configured to control at least one machine in the machine system.” Independent claim 34 recites, *inter alia*, “the modular control unit comprises control circuitry configured to control at least one machine in the system of distributed machines.” Independent claim 51 recites, *inter alia*, “a modular motor control unit.”

In contrast to the above recitations, the Knox reference discloses a user interface module 2 for interacting with a motor overload protector (MOP) 1. *See* Knox, ¶ [0103]. This user interface 2 does not control the motor to which the MOP 1 is applied. The Examiner asserted that the micro-controller 75 in the modular control unit 2 constitutes control circuitry configured to control the machine. Office Action, page 3. Specifically, the Examiner stated that “the circuitry of microcomputer 75 allows the user to enter control commands and receive status updates of the motor being controlled- par. 0104-0109.” *Id.* This assessment of the Knox reference is erroneous. From the very passage cited by the Examiner, the Knox reference discloses that the micro-controller 75 controls the user interface 2, not a motor. *See* Knox, ¶ [0104]. Indeed, the Knox application is directed to “a digital programmable motor overload protector, which provides low noise, low distortion, and high accuracy data acquisition for low voltage motors.” Knox, ¶ [0002]. The user interface 2 enables a user to view the status of the motor and the overload relay. *See* Knox, ¶ [0108]. A digital signal processor (DSP) 55 in the MOP 1 controls the MOP’s operations. *See* Knox, ¶ [0101]. The user interface 2 merely

provides an interface with the DSP 55 and does not control the motor. *See* Knox, ¶¶ [0220]-[0234]. Specifically, the micro-controller 75 in the user interface 2 operates to initiate the user interface 2, at which time control of the user interface 2 is taken over by the DSP 55. *See* Knox, ¶¶ [0220] and [0231]. To reiterate, a user interface does not constitute a control unit for controlling a motor as recited in the present claims.

The Examiner further argued that Knox provides the user with a menu of operational values and configuration settings on the user interface 2. Office Action, page 16. Indeed, the Knox reference discloses that the user may “view actual operational parameters of a running motor” on the user interface 2. Knox, ¶ [0103] (emphasis added). In addition, the Examiner stated that Knox discloses control lines connected to the user interface 2. Office Action, page 16. As discussed above, the DSP 55 takes over control of the user interface 2 after power-on, therefore there are “communications and control lines to the removable user interface.” Knox, ¶ [0098].

For at least these reasons, the Knox reference does not anticipate independent claims 1, 16, 27, 31, 34, or 51, or their dependent claims. Applicant therefore respectfully requests removal of the rejections of independent claims 1, 16, 27, 31, 34, and 51, and their dependent claims, under 35 U.S.C. § 102 as these claims are clearly not anticipated by Knox.

The Knox reference does not disclose a base having a short-circuit protection device.

Independent claim 16 recites, *inter alia*, “a motor mountable base comprising a short-circuit tripping disconnect.” Independent claim 34 recites, *inter alia*, “a short-circuit protective device.” Dependent claim 2 recites, “wherein the motor protection device comprises a short-circuit protective device.”

The Examiner stated that Knox discloses a short-circuit protective device. Specifically, the Examiner argued that a ground fault is a type of short-circuit and that Knox discloses ground fault protection. However, Knox merely discloses “sensing and measuring of three phase electrical currents as well as ground fault current.” Knox, ¶

[0010]. The mere existence of a ground phase clearly does not disclose short-circuit protection, as short circuits are likely to occur between the ground phase and another phase. Furthermore, the Knox reference is directed to a motor overload protector. *See* Knox, Title. According to the National Fire Protection Association, which propagates standards for electrical wiring and equipment, “[a] fault, such as a short circuit or a ground fault, is not an overload.” National Electric Code 70-29 (2008 EDITION) (emphasis added).

For at least these reasons, the Knox reference does not anticipate independent claims 1 or 16, dependent claim 2, or their dependent claims. Applicant therefore respectfully requests removal of the rejections of independent claims 1 and 16, dependent claim 2, and their dependent claims, under 35 U.S.C. § 102 as these claims are clearly not anticipated by Knox.

The Knox reference does not disclose different control units having different types of control circuitry.

Independent claim 27 recites, *inter alia*, “a plurality of different modular control units ... wherein the modular control units comprise different types of control circuitry configured to enable different controls of at least one machine in the machine system.” Independent claim 31 recites, *inter alia*, “wherein the control unit is selectable from a plurality of different types of control units having different types of control circuitry.” Independent claim 51 recites, *inter alia*, “wherein the modular motor control unit is selectively replaceable from a plurality of different types of motor control units.”

In the Office Action, the Examiner stated that because the units in Knox are identical, “they cannot have different control circuitry as applicant’s limitations intend.” Office Action, page 17. Accordingly, in light of the present amendments, the rejections of independent claims 27, 31, and 51 in view of Knox are moot. Applicant therefore respectfully requests removal of the rejections of independent claims 27, 31, and 51, and their dependent claims, under 35 U.S.C. § 102 as these claims are clearly not anticipated by Knox.

Claim Rejections Relying on the Houf Reference

Elements of the claims omitted from the Houf reference are discussed below.
Similar claim elements found in multiple claims will be addressed together.

The Houf reference does not disclose a motor protection device housed in the base.

Independent claim 1 recites, *inter alia*, “a machine mountable base comprising a motor protection device housed in the base.”

In rejecting claim 1, the Examiner stated that Houf discloses “a machine mountable base [Fig. 1, 16] comprising a motor protection device [Fig. 2, 70; col. 4 lines 52-61].” Office Action, page 12. Contrary to this assertion, the heat sink 16 does not comprise the electrical transient protection module 70. *See* Houf, Fig. 2. Indeed, the heat sink 16 merely conducts heat away from the switch modules 28. *See* Houf, col. 4, lines 1-37; Fig. 1. Furthermore, the electrical transient protection module 70 is not housed in the heat sink 16 or in the electrical power switching assembly 14. *See id.* Rather, the module 70 is an optional device which may be connected to the motor controller 10. *See* Houf, col. 4, lines 52-61.

For at least these reasons, the Houf reference does not anticipate independent claim 1 or its dependent claims. Applicant therefore respectfully requests removal of the rejections of independent claim 1 and its dependent claims under 35 U.S.C. § 102 as these claims are clearly not anticipated by Houf.

The Houf reference does not disclose a short-circuit protective device.

Independent claim 16 recites, *inter alia*, “a motor mountable base comprising a short-circuit tripping disconnect.” Independent claim 34 recites, *inter alia*, “a machine mountable base, comprising: a short-circuit protective device; and a disconnect device.”

The Examiner did not identify a short-circuit tripping disconnect or a short-circuit protective device in the Houf reference. *See* Office Action, pages 12-13. The Examiner

identified the electrical transient protection module 70 of Houf as a motor protection device, and Applicant assumes this module 70 is also supposed to disclose the present limitation. However, transient protection is not analogous to short-circuit protection. A short circuit is a low-resistance connection of nodes of an electrical circuit which are not intended to be connected. Short circuit protection may be provided, for example, by a circuit breaker or a machine disconnect device. Transient protection, on the other hand, is essentially a surge protector. Surge protection generally operates by diverting current to ground. Accordingly, transient protection as disclosed in the cited reference does not anticipate short-circuit protection as recited in the present claims.

For at least these reasons, the Houf reference does not anticipate independent claims 16 or 24, or their dependent claims. Applicant therefore respectfully requests removal of the rejections of independent claims 16 and 24, and their dependent claims, under 35 U.S.C. § 102 as these claims are clearly not anticipated by Houf.

The Houf reference does not disclose different control units having different types of control circuitry.

Independent claim 27 recites, *inter alia*, “a plurality of different modular control units . . . wherein the modular control units comprise different types of control circuitry configured to enable different controls of at least one machine in the machine system.” Independent claim 31 recites, *inter alia*, “wherein the control unit is selectable from a plurality of different types of control units having different types of control circuitry.” Independent claim 51 recites, *inter alia*, “wherein the modular motor control unit is selectively replaceable from a plurality of different types of motor control units.” Dependent claim 65 recites, “wherein the modular control unit is selected from and interchangeable with a plurality of modular control units, each having different control circuitry.” Dependent claim 67 recites, “wherein the replaceable control unit is selected from and interchangeable with a plurality of replaceable control units, each having different control circuitry.” Dependent claim 73 recites, “wherein the modular control

unit is selected from and interchangeable with a plurality of modular control units, each having different control circuitry.”

In the Office Action, the Examiner stated, “Houf discloses that the modular control unit is selected from an interchangeable with a plurality of modular control units, each having different control circuitry [switching device 28 comes in different power ratings- col. 1 lines 36-47 and 60-65; Fig. 4].” Office Action, page 13. As discussed above, the Examiner identified the heat sink 16 as the presently recited motor/machine protection base and cited the electrical power switching assembly 14 as the modular/replaceable control unit. Office Action, page 12. For at least the reasons identified above, the heat sink 16 does not anticipate the motor protection base recited in the independent claims.

Applicant therefore considered the possibility that the electrical power switching assembly 14 may be a mountable base, and the control logic module 12 of Houf may be a modular control unit. It should be noted that this is not the reasoning behind the Examiner’s rejections based on Houf in the present Office Action. *See* Office Action, pages 12-13. Again, Applicant does not believe the electrical power switching assembly 14 constitutes a motor protection device, and the switch modules 28 clearly do not provide short-circuit protection. However, assuming, *arguendo*, that the electrical power switching assembly 14 constitutes a mountable base, the Houf reference does not disclose that the control logic module 12 may have different control circuitry. On the contrary, Houf states that the “modular design enables the control logic modules 12 to be manufactured as a separate unit for use with various sets of switch modules 28 to control motors of different power ratings.” Houf, col. 6, lines 1-5.

For at least these reasons, the Houf reference does not anticipate independent claims 27, 31, or 51, dependent claims 65, 67, or 73, or their dependent claims. Applicant therefore respectfully requests removal of the rejections of independent claims 27, 31, and 51, dependent claims 65, 67, and 73, and their dependent claims, under 35 U.S.C. § 102 as these claims are clearly not anticipated by Houf.

Claim Rejections under 35 U.S.C. § 103(a)

The Examiner rejected claims 10-11, 22-23, and 57-58 under 35 U.S.C. § 103(a) as being unpatentable over Knox in view of Hollenbeck (U.S. Patent No. 5,557,182). The Applicant respectfully traverses this rejection.

Legal Precedent

The burden of establishing a *prima facie* case of obviousness falls on the Examiner. *Ex parte Wolters and Kuypers*, 214 U.S.P.Q. 735 (PTO Bd. App. 1979). Obviousness cannot be established by combining the teachings of the prior art to produce the claimed invention absent some teaching or suggestion supporting the combination. *ACS Hospital Systems, Inc. v. Montefiore Hospital*, 732 F.2d 1572, 1577, 221 U.S.P.Q. 929, 933 (Fed. Cir. 1984). The mere fact that references can be combined or modified does not render the resultant combination obvious unless the prior art also suggests the desirability of the combination. *In re Mills*, 916 F.2d 680, 16 U.S.P.Q.2d. 1430 (Fed. Cir. 1990). Accordingly, to establish a *prima facie* case, the Examiner must not only show that the combination includes all of the claimed elements, but also a convincing line of reason as to why one of ordinary skill in the art would have found the claimed invention to have been obvious in light of the teachings of the references. *Ex parte Clapp*, 227 U.S.P.Q. 972 (B.P.A.I. 1985). The Examiner must provide objective evidence, rather than subjective belief and unknown authority, of the requisite motivation or suggestion to combine or modify the cited references. *In re Lee*, 61 U.S.P.Q.2d. 1430 (Fed. Cir. 2002). Moreover, a statement that the proposed modification would have been “well within the ordinary skill of the art” based on individual knowledge of the claimed elements cannot be relied upon to establish a *prima facie* case of obviousness without some objective reason to combine the teachings of the references. *Ex parte Levengood*, 28 U.S.P.Q.2d 1300 (Bd. Pat. App. & Inter. 1993); *In re Kotzab*, 217 F.3d 1365, 1371, 55 U.S.P.Q.2d. 1313, 1318 (Fed. Cir. 2000); *Al-Site Corp. v. VSI Int'l Inc.*, 174 F.3d 1308, 50 U.S.P.Q.2d. 1161 (Fed. Cir. 1999).

It is improper to combine references where the references teach away from their combination. *In re Grasselli*, 713 F.2d 731, 743, 218 U.S.P.Q. 769, 779 (Fed. Cir. 1983); M.P.E.P. § 2145. Moreover, if the proposed modification or combination of the prior art would change the principle of operation of the prior art invention being modified, then the teachings of the references are not sufficient to render the claims *prima facie* obvious. *In re Ratti*, 270 F.2d 810, 123 U.S.P.Q. 349 (CCPA 1959); *see* M.P.E.P. § 2143.01(VI). If the proposed modification or combination would render the prior art invention being modified unsatisfactory for its intended purpose, then there is no suggestion or motivation to make the proposed modification. *In re Gordon*, 733 F.2d 900, 221 USPQ 1125 (Fed. Cir. 1984); *see* M.P.E.P. § 2143.01(V).

Claims Features Omitted from the Cited References

First, Applicants respectfully submits that the present claims are allowable at least based on their dependence from allowable based claims. Claims 10 and 11 depend from claim 1, claims 22 and 23 depend from claim 16, and claims 57 and 58 depend from claim 34. The Knox reference fails to disclose all the elements of independent claims 1, 16, and 34, as set forth above, and the Hollenbeck reference fails to obviate the deficiencies of the Knox reference with respect to these independent claims. Accordingly, Applicant respectfully requests removal of the rejections of dependent claims 10, 11, 22, 23, 57, and 58 under 35 U.S.C. § 103 as these claims are clearly not obvious over Knox in view of Hollenbeck.

Improper Combination – References Teach Different Principles of Operation

In addition, the cited references teach contrastingly different intended purposes and principles of operation, which would change if the cited references were hypothetically combined as suggested by the Examiner. As summarized above, a proposed modification or combination of references is entirely improper and insufficient to support a *prima facie* case of obviousness, where the proposed modification or combination would change the principle of operation of the cited reference or render the cited reference unsatisfactory for its intended purpose.

Knox discloses a motor overload protector having a removable user interface module. The motor overload protector “provides low noise, low distortion, and high accuracy data acquisition for low voltage motors on par with the systems designed for medium and high voltage motor protection.” Knox, page 1, paragraph [0002]. The user interface module displays messages from the motor overload protector. Knox, page 7, paragraph [1017]. The principal of operation of Knox requires that the removable module be a user interface.

In contrast, Hollenbeck discloses “a controller providing a desired operating area for a motor driving a fan for inducing a draft in an exhaust.” Hollenbeck, column 1, lines 26-28. The principal of operation of Hollenbeck requires that the controller runs a motor.

The Examiner stated that “Knox’s device is implicitly capable of controlling/protecting any motor in general [par. 0002; par. 0010], including a soft start motor controller” or “a variable frequency machine drive.” Office Action, pages 10-11. The Examiner seems to be confusing elements of the present claims in making this combination. Claims 10, 11, 22, 23, 57, and 58 are not to the type of motor being controlled, but rather are further limitations on the controllers in the respective independent claims.

Turning to the claims, the present claims 10 and 11 recite the limitations that the modular control unit of claim 1 is a soft start machine controller or a variable frequency machine drive, respectively. Claims 22 and 23 recite the limitations that the replaceable control unit is a soft start motor controller or a variable frequency machine drive, respectively. Claims 57 and 58 recite the limitations that the control circuitry is a variable frequency machine drive or a soft-start machine controller, respectively.

As such, a hypothetical combination of the overload controller in Knox with the alternative controllers the Examiner asserted are disclosed in Hollenbeck would render the overload controller inoperable for its intended purpose. Replacing the user interface module of Knox with a soft start machine controller or variable frequency machine drive

would defeat all of the overload notification and monitoring features of Knox. In view of these incompatible principles of operation, the cited references cannot be combined and the Examiner's rejection is improper. For at least these reasons, among others, Applicant respectfully requests withdrawal of the foregoing combination and the corresponding rejections under 35 U.S.C. § 103.

New Claims

New claims 76-78 depend from claims 27, 31, and 51, respectively. Applicant respectfully submits that the new claims are allowable at least based on their dependencies from allowable base claims. In addition, each of claims 76-78 recites a short-circuit protective device housed within the base, which is not disclosed by the cited references, as discussed above. Accordingly, Applicant submits that the new claims are also allowable based on unique subject matter recited therein.

Conclusion

Applicant respectfully submits that all pending claims should be in condition for allowance. However, if the Examiner believes certain amendments are necessary to clarify the present claims or if the Examiner wishes to resolve any other issues by way of a telephone conference, the Examiner is kindly invited to contact the undersigned attorney at the telephone number indicated below.

Respectfully submitted,

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